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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,644	09/23/2003	Dale A. Harrison	METR:004	2039
36275 7590 09/11/2007 O'KEEFE, EGAN, PETERMAN & ENDERS LLP 1101 CAPITAL OF TEXAS HIGHWAY SOUTH #C200 AUSTIN, TX 78746			EXAMINER LEE, HWA S	
			ART UNIT 2886	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/668,644

Applicant(s)

HARRISON, DALE A.

Examiner

Andrew Hwa S. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 37-48 and 50-74 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 45 and 67 is/are allowed.
- 6) ☐ Claim(s) 37-44, 46, 50-52, 54, 57-61, 64-66 and 68-74 is/are rejected.
- 7) ☐ Claim(s) 47, 48, 53, 55, 56, 62 and 63 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers.

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Remarks***

1. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.
2. The indicated allowability of claims is withdrawn in view of the newly discovered reference(s). Rejections based on the newly cited reference(s) follow.

### ***Claim Objections***

3. Claims 38, 40, 66, 72, and 74 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims are narrative and do not further structurally limit the parent claim.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 46 and 54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

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regards as the invention. The claims are duplicates and do not have any patentable distinction between them.

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 37 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 22 of U.S. Patent No. 7,026,626. Although the conflicting claim is not identical, it is not patentably distinct from each other for the reasons given with regards to limitations not given patentable weight (i.e. method step of “the reference channel light path is utilized for...” ) and claim 37 is broader and thus already protected by claim 22 of U.S. Patent No. 7,026,626. As for the environmentally chamber and the coupling mechanism (windows 206), claim 37 already anticipated such limitation.

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***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-48 and 50-74 contain functional limitations and these limitations can be met by the prior art if the structure of the prior art is capable of performing the claimed functions.

***2114 [R-1] Apparatus and Article Claims - Functional Language***

**APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM  
THE PRIOR ART**

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function.

In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re

Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not

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what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

**Limitations following “may be”, “configured to”, “can be”, and “to enable” are not positive limitations and thus are not given patentable weight.**

**1. Claims 37-44, 46, 50-52, 54, 57-61, 64-66, and 68-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US 6,184,984) in view of Jeong et al (US 5,903,351).**

Lee et al (“Lee” hereinafter) show a system for measuring polarimetric spectrum and other properties of a sample comprising:  
a light source (10) to create a sample channel light path ();  
at least one reference channel light path (48) that does not encounter a sample;  
at least one optical element (10 or 95) enabling or disabling the reference or sample light path:

a plurality of reflectometer system elements (10, 22) shared by both the sample and reference light paths; and

wherein the reference channel light path collects data that may be utilized to account for system and environmental changes to adjust the reflectance data obtained.

Lee states that the reference path is used to improve the signal to noise ratio of the measurement, but does not expressly state how this is achieved, however, it is well known in the art that a reference path is used to improve the signal to noise ratio by subjecting the reference beam to the same conditions as the sample path except for interacting the reference beam with the sample. Thus the only difference between the sample beam from the reference beam is that the sample beam has interacted with the sample. All other effects such as environmental and system changes can be subtracted from the sample measurement. Thus the pathlength of both the sample and reference beam are near equal in length. Furthermore, Lee teaches the beam to be in the deep ultraviolet range (column 3, line 45+) and shows the sample and reference measurements are performed proximate in time.

Lee does not show the two environmentally controlled chambers connected with one coupling mechanism. Jeong shows spectroscopic analysis of a waver surface and a reaction chamber wherein Jeong shows an environmentally controlled chamber (50) and two coupling mechanisms (45 and 70). Jeong does not expressly state the apparatus is in an environmentally controlled chamber but it would be inherent that the apparatus is in an environmentally controlled chamber rather than completely exposed to the outdoor environment. Therefore, the Examiner submits that there are two environmentally controlled chambers (chamber 50 with the factory or clean room) connected via two coupling mechanisms (45, 70). Official Notice is taken that clean rooms and factories are well know to be environmentally controlled.

Furthermore, Official Notice is taken that environmentally controlled chambers are well known, and at the time of the invention, one of ordinary skill in the art would have put the

apparatus in an environmentally controlled chamber in order to minimize harmful effects caused by temperature fluctuations that affect optical properties of the elements of the apparatus. As for the additional controlled chambers, lasers are housed in temperature controlled housings in order to stabilize the wavelength of the laser. Since lasers have lenses at the light output, the lens would meet the limitation of the coupling mechanism.

At the time of the invention, one of ordinary skill in the art would have the wafer in an environmentally controlled chamber connected via two coupling mechanisms (windows) in order to keep the wafer in a environmentally separate chamber so that environmental effect do not affect the measurement and to keep the wafer protected from the atmosphere.

Claims 38, 40, are narrative and contain no further structural limitations.

With regards to claims 41, and 57, Lee shows all the limitations as discussed above and further shows the sample detector array is the same detector array used for the reference beam (column 5, lines 40+).

With respect to claims 42, 44, 50, 52, and 60, Lee shows many beamsplitters (45, 95, 28, etc.) establishing a reference and sample beam.

With respect to claims 43, 51, and 59, please see column 11, lines 13-34, shutter 31 and aperture shown in figure 6.

With respect to claims 46, 54, 61, the reference and sample channels are “near-equal” optical pathlength.

With respect to claims 64 and 65, please see the parabolic mirror of spectrometer 322.



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With respect to claim 66, the method of manufacturing is not given patentable weight since the claim does not further define the structure of the mirror.

With respect to claims 68 and 69, coatings used for reflective surfaces are well known in the art and at the time of the invention, one of ordinary skill in the art would have used a coating in order to make an efficient reflective surface.

With respect to claims 70 and 71, official notice is taken that CCDs are well known in the art, and at the time of the invention, one of ordinary skill in the art would have used a CCD for the detector array as CCDs are cost effective, sensitive, and compact.

With respect to claim 73, Lee teaches the use of two different light sources to condition the beam.

With respect to claim 74, the apparatus is sufficiently compact.

### *Allowable Subject Matter*

2. **Claims 45 and 67** allowed.
3. **Claims 47-48, 53, 55, 56, 62, and 63** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

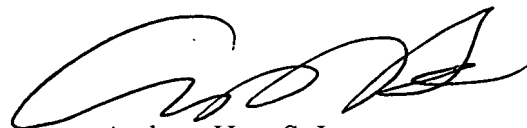
### *Response to Arguments*

4. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur R. Chowdhury can be reached on 571-272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Andrew Hwa S. Lee  
Primary Examiner  
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